Current musicological practice provides us with a range of procedures for investigating aspects of the construction of particular genres of Western art music, or for understanding typical listener perceptual response patterns. Each method attempts to deal with the problems of subjectivity of the analyst and/or the nature of music as a time-based intangible artform. As a result, conventional methods overlook or simplify aspects of making sense of a complete piece of music as a lived experience. In the late 20th century, computer scientists developed Fuzzy Logic as a way to explicitly incorporate the subjectivity of human problem-solving in environments of imprecision and uncertainty. Avant-garde music is difficult to understand. My thesis is that Fuzzy Logic is an informative way to represent the personal and subjective experience of a piece of avant-garde music as part of analysing how that intangible time-based music makes sense. As a result, Fuzzy Logic can be a constructive tool for making sense of any type of Western art music, composed using any materials, techniques and forms.

This thesis develops a formalised system of music analysis called Fuzzy IDEAS (Fuzzy Inclusive Dialectical Expressive Analysis System). Fuzzy IDEAS is a wholistic, transparent, systematic, and inclusive method for making sense of music. Fuzzy IDEAS incorporates Fuzzy Logic to produce visual representations of the personal experience of listening. This process of ‘smart’ music analysis is extremely flexible and adaptable to include any possible collection of technical features observed by the analyst while openly acknowledging the existence and impact of the analyst’s personal response to that music. The final stage of Fuzzy IDEAS relates the title of the music and efforts to make sense of the music experience as it unfolds, along with patterns of technical qualities and the time structure revealed in the Fuzzy Logic graphic representations of the music experience. The final result of the analysis is a meta-idea which makes sense of that personal experience of that piece of music, which explicitly includes the time dimension.

I have applied this innovative method to four pieces of avant-garde art music, to demonstrate that Fuzzy IDEAS, is a useful way to analyse unconventional, difficult, and unpredictable Western art music. The key contribution to knowledge made in this thesis arises from the detailed application of Fuzzy Logic to music analysis. This practical implementation of Fuzzy Logic translates personal responses and momentary observations results into a detailed yet transparently meaningful visual display of the experience of listening to music as it unfolds over time. In addition to suggesting that any piece of Western art music can be analysed using this new method of ‘smart’ music analysis, Fuzzy IDEAS may also contribute to compositional pedagogy and to audience development. Fuzzy IDEAS has potential for future development into curriculum materials; new technological applications to use in marketing Western art music; and additional modes of listener engagement during concerts.